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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 09/970,487	Applicant(s) LEUNG ET AL.
	Examiner CHRISTINE NG	Art Unit 2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(o).

Status

1) Responsive to communication(s) filed on 23 April 2008.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,3-5,9,12,22-24 and 29-32 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,3-5,9,12,22-24 and 29-32 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 03 October 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 4/23/08

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5, 30 and 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5: The step of: "encapsulating the compressed packet in an Internet Protocol packet to form a compressed packet" (lines 8-9) is unclear since the packet that was compressed was already a multicast Internet Protocol packet (line 4).

In claim 30: It is claimed that the anchor BSC receives "either the at least one unicast packet or the multicast compressed framed packet" (lines 6-7). However, lines 7-14 claim how the anchor BSC and neighboring anchor BSC process the multicast compressed framed packet. It is unclear how lines 7-14 are applied if the anchor BSC was to receive the unicast packet instead of the multicast compressed framed packet.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 7,079,502 to Yamano et al.

Yamano et al disclose in Figure 4 a wireless communication system supporting broadcast transmissions, a method for setting up transmission paths comprising the steps of:

Determining a broadcast transmission range for a broadcast transmission within the system, wherein the broadcast transmission range identifies a first termination node (any of multicast receiving terminal 104-106) for receiving the broadcast transmission.

Refer to Column 1, lines 28-39.

Building a multicast tree (from multicast routers 101-103 to any of multicast receiving terminal 104-106), wherein the step of building the multicast tree comprises the steps of:

Initiating a registration chain including nodes from the first termination node to a broadcast source node, wherein the first termination node and each successive node in the system approaching the broadcast source node in the registration chain registers with an adjacent node until reaching a node already registered with respect to the broadcast transmission. Any of multicast receiving terminal 104-106 who wants to participate in a multicast session sends a multicast registration request to an adjacent multicast router 102,103. The pertinent multicast router 102,103 adds the request to the multicast address-output link matching table 115, which describes the output link from the multicast router 102,103 to the node which issued the participation request. The multicast router 102,103 then issues a registration request for itself to another adjacent

multicast router, which in turn conducts the same process. The processing is finished if the multicast address described in the request already exists in the multicast address-output link matching table 115. Refer to Column 2, lines 11-42.

Generating an Internet Protocol packet (Column 1, lines 21-23), the Internet Protocol packet having a multicast address (Column 1, line 62 to Column 2, line 2).

Transmitting the Internet Protocol packet a broadcast message through the multicast tree over the transmission range.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,079,502 to Yamano et al in view of U.S. Patent No. 6,781,999 to Eyuboglu et al.

Referring to claim 3, Yamano et al do not specifically disclose receiving the broadcast message at the broadcast source; and encapsulating the broadcast message in an IP packet by the broadcast source to form a multicast IP packet in response to receiving the broadcast message.

Eyuboglu et al disclose in Figure 8 that a broadcast source (home agent 102) transmits an IP multicast packet for broadcast transmission to terminals 164. As shown

in Figures 9 and 10, home agent 102 encapsulates the broadcast message in a multicast IP packet for transmission. Refer to Column 7, lines 1-19; and Column 10, lines 11-31. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include receiving the broadcast message at the broadcast source; and encapsulating the broadcast message in an IP packet by the broadcast source to form a multicast IP packet in response to receiving the broadcast message. One would have been motivated to do so to transmit packets over an IP network.

Referring to claim 4, Yamano et al disclose that the multicast IP packet identifies a multicast IP address as a destination. Refer to Column 1, line 62 to Column 2, line 2.

However, Yamano et al do not specifically disclose that the multicast IP packet identifies the broadcast source as a source.

Eyüboğlu et al disclose that multicast IP packets have a source address. Refer to Column 7, lines 44-49. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the multicast IP packet identifies the broadcast source as a source. One would have been motivated to do so in order for receivers to identify the source of received packets.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,079,502 to Yamano et al in view of U.S. Patent No. 6,781,999 to Eyüboğlu et al, and in further view of U.S. Patent No. 6,895,216 to Sato et al.

Yamano et al disclose in Figure 14 receiving the multicast IP packet at the first termination node (Figure 4, any of multicast receiving terminals 104-106).

Yamano et al do not disclose wherein the source of the compressed packet is altered to identify the first termination node and the destination of the compressed packet is altered to identify a BSC IP address.

Eyuboglu et al disclose in Figure 8 that when the AT sends multicast packets to the PDSN, the source address is the address of the AT. When the PDSN sends multicast packets to the home agent, the source address is the address of the PDSN. Refer to Column 7, lines 44-49. Eyuboglu et al disclose in Figure 9 that when the home agent sends multicast packets to the PDSN, the destination address is first encapsulated as the address of the AT 110 and then encapsulated as the address of the PDSN. Refer to Column 7, lines 8-18. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein the source of the compressed packet is altered to identify the first termination node and the destination of the compressed packet is altered to identify a BSC IP address. One would have been motivated to do so to allow packets to be transmitted from node to node along a path with headers representing the changing sources and destinations.

Yamano et al also do not disclose compressing the multicast IP packet by the first termination node to form a comprised packet in response to receiving the multicast IP packet and encapsulating the compressed packet in an IP packet to form a compressed packet.

Sato et al disclose compressing multicast information to several wireless terminals in accordance with a transmission rate. Refer to Column 11, lines 42-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to include compressing the multicast IP packet by the first termination node to form a comprised packet in response to receiving the multicast IP packet and encapsulating the compressed packet in an IP packet to form a compressed packet. One would have been motivated to do so to save bandwidth and processing time.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,079,502 to Yamano et al in view of U.S. Patent No. 6,490,259 to Agrawal et al.

Yamano et al do not disclose receiving the broadcast message as a multicast IP packet at the first termination node, wherein the multicast IP packet comprises a timestamp, wherein first termination node comprises an anchor BSC node; wherein transmitting the broadcast message further comprises: duplicating the multicast IP packet at the anchor BSC node, wherein duplicating includes copying the timestamp; transmitting the duplicate multicast IP packet to at least one neighboring BSC node; and transmitting the respective multicast IP packet and the duplicate multicast IP packet to a same mobile station by both the anchor BSC node and the at least one neighboring BSC node.

Agrawal et al disclose in Figure 1B that a BSC 111,121 receives a packet with a time stamp, which indicates what time the original packet was generated, and forwards copies of the packet and time stamp to other adjacent BSC's for transmission. Refer to Column 7, line 45 to Column 8, line 26. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include receiving the

broadcast message as a multicast IP packet at the first termination node, wherein the multicast IP packet comprises a timestamp, wherein first termination node comprises an anchor BSC node; wherein transmitting the broadcast message further comprises: duplicating the multicast IP packet at the anchor BSC node, wherein duplicating includes copying the timestamp; transmitting the duplicate multicast IP packet to at least one neighboring BSC node; and transmitting the respective multicast IP packet and the duplicate multicast IP packet to a same mobile station by both the anchor BSC node and the at least one neighboring BSC node. One would have been motivated to do so to transmit two copies of a packet to a receiver in case of error in one of the packets.

9. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,079,502 to Yamano et al in view of U.S. Patent No. 6,490,259 to Agrawal et al, and in further view of U.S. Patent No. 7,039,180 to Issaa et al.

Yamano et al do not disclose wherein the broadcast message further comprises a HSBS channel multiplexed in a TDM fashion within a signal broadcast channel.

Issaa et al disclose that each frequency band in a FDM system can be divided by TDM into one or more high-speed channels. Refer to Column 4, lines 47-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein the broadcast message further comprises a HSBS channel multiplexed in a TDM fashion within a signal broadcast channel. One would have been motivated to do so to support services requiring high speed data transmission.

10. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 7,079,502 to Yamano et al in view of U.S. Patent No. 7,039,180 to Issaa et al. Refer to the rejection of claim 23.

11. Claims 29 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,781,999 to Eyuboglu et al in view of U.S. Patent No. 6,895,216 to Sato et al in view of U.S. Patent No. 6,801,508 to Lim, and in further view of U.S. Patent No. 7,079,502 to Yamano et al.

Referring to claim 29, Eyuboglu et al disclose in Figure 8 a wireless communication system for processing broadcast transmissions in a wireless communication system, the system comprising:

A packet service data node (PDSN 100) adapted to receive a broadcast message, comprising a multicast Internet Protocol address, wherein the packet data service node is operable to generate and transmit a multicast framed packet (Figure 10, link layer frame carrying IP multicast packet 140) based on the broadcast message, wherein the multicast framed packet is addressed to the multicast Internet Protocol address (Figure 10, A10 Tunnel ID 150). The PDSN receives an IP packet from IP core network that belongs to a multicast group, and therefore has a multicast IP destination address. The PDSN then forms the link layer frame carrying IP multicast packet 140 with ATI 150. Refer to Column 2, lines 41-58 and Column 9, lines 6-10 and lines 22-40.

A *radio network controller* (RNC 124,128) adapted to receive the multicast framed packet, wherein the *radio network controller* is operable to generate and transmit at least one unicast packet based on the multicast framed packet, wherein the

at least one unicast packet is addressed to at least one unicast addressed corresponding to a base station (connected to RN 160,162). "When the RNC serves users from several Radio Node's 160,162, it tunnels unicast copies of the air link frames carrying the IP packets to all these RN's." (Column 10, lines 41-43). Refer to Column 10, lines 11-31; and Column 10, lines 41-51.

A content source (home agent 102) operable to transmit the broadcast message to the *radio network controller* based on a transmission range (from home agent 102 to terminals 164), wherein the transmission range identifies a first termination node (terminals 164) for receiving the broadcast message. Refer to Column 7, lines 1-18.

Eyüboğlu et al do not disclose that the Internet Protocol packet has been compressed.

Sato et al disclose compressing multicast information to several wireless terminals in accordance with a transmission rate. Refer to Column 11, lines 42-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the Internet Protocol packet has been compressed; the motivation being that in case transmission rate is low, compressing the multicast information allows more information to be transmitted per unit time; thereby saving bandwidth and processing time.

Eyüboğlu et al also do not disclose that the *radio network controller* is a *packet control function node*.

Lim discloses in Figure 4 that a RNC (radio network controller) performs the same functions as a packet control function PCF node (RNC/PCF 121,122,123).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the *radio network controller* is a *packet control function node*; the motivation being that a RNC performs the same functions in a circuit switched environment as a PCF in a packet data environment.

Eyüboğlu et al also do not disclose wherein the transmission range comprises a multicast tree built by initiating a registration chain from the first termination node to the content source, wherein the first termination node and each successive node in the registration chain approaching the content source registers with an adjacent node until reaching a node already registered with respect to the broadcast message.

Yamano et al disclose in Figure 14 a system wherein any of multicast receiving terminal 104-106 who wants to participate in a multicast session can send a multicast registration request to an adjacent multicast router 102,103. The pertinent multicast router 102,103 adds the request to the multicast address-output link matching table 115, which describes the output link from the multicast router 102,103 to the node which issued the participation request. The multicast router 102,103 then issues a registration request for itself to another adjacent multicast router, which in turn conducts the same process. The processing is finished if the multicast address described in the request already exists in the multicast address-output link matching table 115. Refer to Column 2, lines 11-42. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein the transmission range comprises a multicast tree built by initiating a registration chain from the first termination node to the content source, wherein the first termination node and each successive

node in the registration chain approaching the content source registers with an adjacent node until reaching a node already registered with respect to the broadcast message. One would have been motivated to do so in order to connect a receiver to a multicast transmission tree to receive broadcasts.

Referring to claim 12, Eyuboglu et al disclose that the packet control function node (RNC 124,128) processes the broadcast message and forwards the broadcast message to an intended recipient. The RNC 124,128 forwards an incoming multicast packet to those sectors that have a member in that multicast group. Refer to Column 10, lines 52-55 and Column 11, lines 49-52.

12. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,781,999 to Eyuboglu et al in view of U.S. Patent No. 6,895,216 to Sato et al in view of U.S. Patent No. 6,801,508 to Lim, and in further view of U.S. Patent No. 7,039,180 to Issaa et al.

Eyuboglu et al disclose in Figure 8 a wireless communication system for processing broadcast transmissions in a wireless communication system, the system comprising:

A packet service data node (PDSN 100) adapted to receive a broadcast message, comprising a multicast Internet Protocol address, wherein the packet data service node is operable to generate and transmit a multicast framed packet (Figure 10, link layer frame carrying IP multicast packet 140) based on the broadcast message, wherein the multicast framed packet is addressed to the multicast Internet Protocol address (Figure 10, A10 Tunnel ID 150). The PDSN receives an IP packet from IP core

network that belongs to a multicast group, and therefore has a multicast IP destination address. The PDSN then forms the link layer frame carrying IP multicast packet 140 with ATI 150. Refer to Column 2, lines 41-58 and Column 9, lines 6-10 and lines 22-40.

A radio network controller (RNC 124,128) adapted to receive the multicast framed packet, wherein the radio network controller is operable to generate and transmit at least one unicast packet based on the multicast framed packet, wherein the at least one unicast packet is addressed to at least one unicast addressed corresponding to a base station (connected to RN 160,162). "When the RNC serves users from several Radio Node's 160,162, it tunnels unicast copies of the air link frames carrying the IP packets to all these RN's." (Column 10, lines 41-43). Refer to Column 10, lines 11-31; and Column 10, lines 41-51.

A content source (home agent 102) operable to transmit the broadcast message to the radio network controller based on a transmission range (from home agent 102 to terminals 164), wherein the transmission range identifies a first termination node (terminals 164) for receiving the broadcast message. Refer to Column 7, lines 1-18.

Eyüboğlu et al do not disclose that the Internet Protocol packet has been compressed.

Sato et al disclose compressing multicast information to several wireless terminals in accordance with a transmission rate. Refer to Column 11, lines 42-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the Internet Protocol packet has been compressed; the motivation being that in case transmission rate is low, compressing the multicast

information allows more information to be transmitted per unit time; thereby saving bandwidth and processing time.

Eyuboglu et al also do not disclose that the *radio network controller* is a *packet control function node*.

Lim discloses in Figure 4 that a RNC (radio network controller) performs the same functions as a packet control function PCF node (RNC/PCF 121,122,123). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the *radio network controller* is a *packet control function node*; the motivation being that a RNC performs the same functions in a circuit switched environment as a PCF in a packet data environment.

Eyuboglu et al also do not disclose wherein the broadcast message further comprises a HSBS channel multiplexed in a TDM fashion within a signal broadcast channel. Refer to the rejection of claim 23.

13. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,781,999 to Eyuboglu et al in view of U.S. Patent No. 6,895,216 to Sato et al in view of U.S. Patent No. 6,801,508 to Lim in view of U.S. Patent No. 7,079,502 to Yamano et al, and in further view of U.S. Patent No. 6,490,250 to Agrawal et al.

Eyuboglu et al do not disclose a timestamp associated with the multicast compressed framed packet; wherein the packet control function node is further operable to transmit the multicast compressed framed packet; and wherein the base station comprises an anchor BSC operable to receive either the at least one unicast packet or the multicast compressed framed packet, wherein the anchor BSC is further operable to

duplicate the multicast compressed framed packet, including copying the timestamp, and further operable to transmit the duplicate multicast compressed framed packet; at least one neighboring BSC node operable to receive the duplicate multicast compressed framed packet, and wherein both the anchor BSC node and the at least one neighboring BSC node are operable to transmit the respective multicast compressed framed packet and he duplicate multicast compressed packet to a same mobile station.

Agrawal et al disclose in Figure 1B that a BSC 111,121 receives a packet with a time stamp, which indicates what time the original packet was generated, and forwards copies of the packet and time stamp to other adjacent BSC's for transmission. Refer to Column 7, line 45 to Column 8, line 26. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to a timestamp associated with the multicast compressed framed packet; wherein the packet control function node is further operable to transmit the multicast compressed framed packet; and wherein the base station comprises an anchor BSC operable to receive either the at least one unicast packet or the multicast compressed framed packet, wherein the anchor BSC is further operable to duplicate the multicast compressed framed packet, including copying the timestamp, and further operable to transmit the duplicate multicast compressed framed packet; at least one neighboring BSC node operable to receive the duplicate multicast compressed framed packet, and wherein both the anchor BSC node and the at least one neighboring BSC node are operable to transmit the respective multicast compressed framed packet and he duplicate multicast compressed packet to a same

mobile station. One would have been motivated to do so to transmit two copies of a packet to a receiver in case of error in one of the packets.

14. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,781,999 to Eyuboglu et al in view of U.S. Patent No. 6,895,216 to Sato et al in view of U.S. Patent No. 6,801,508 to Lim in view of U.S. Patent No. 7,079,502 to Yamano et al in U.S. Patent No. 6,490,250 to Agrawal et al and in further view of U.S. Patent No. 7,039,180 to Issaa et al.

Eyuboglu et al do not disclose wherein the broadcast message further comprises a HSBS channel multiplexed in a TDM fashion within a signal broadcast channel.

Issaa et al disclose that each frequency band in a FDM system can be divided by TDM into one or more high-speed channels. Refer to Column 4, lines 47-52. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein the broadcast message further comprises a HSBS channel multiplexed in a TDM fashion within a signal broadcast channel. One would have been motivated to do so to support services requiring high speed data transmission.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTINE NG whose telephone number is (571)272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571) 272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C. Ng
July 8, 2008

/FIRMIN BACKER/
Supervisory Patent Examiner, Art Unit 2616